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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/805,355	03/22/2004	Tatsuya Maruyama	119173	9004

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EXAMINER	
ANGEBRANNDT, MARTIN J	
ART UNIT	**PAPER NUMBER**
1756	

MAIL DATE	DELIVERY MODE
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/805,355	MARUYAMA ET AL.	
	Examiner	Art Unit	
	Martin J. Angebranndt	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 April 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2 and 4-22* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2 and 4-22* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

1. The response of the applicant has been read and given careful consideration. Responses to the arguments are presented after the first rejection to which they are directed. The applicant has perfected priority for the claimed invention to 03/24/2003, the filing date of JP 2003-081291 based upon the certified translation provided.

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1,2 and 4-22 are rejected under 35 U.S.C. 102(b) as being fully anticipated by JP 2001-294652 (machine translation provided), alone or in view of Hiraga et al. "Preparation of the intracavity-grade ..."Chem. Lett., pp. 2255-2258 (1990).

The polyester azo obtained in example 1 is coated to form a layer of 100 microns in thickness (0.1 mm) on a glass substrate.[0118] The use of hot pressing is disclosed. [0072]. The thickness can be 0.1 to 5 mm [0700]. Useful substrates include glass and polymers, such as

acrylics and polyesters. [0070]. After formation it can be exfoliated from the substrate [0072]. It may be formed into any shape, including a film, sheet, tape or disk. [0069].

Hiraga et al. "Preparation of the intracavity-grade ..."Chem. Lett., pp. 2255-2258 (1990) describes the hot press method with an applied vacuum in forming clear, flat, smooth films by pressing the sample between two glass plates and heating under reduced pressure. The film lacks pore due to the absence of solvent in the film forming process. (page 2256).

In addressing the embodiments not anticipated by the reference, it would have been obvious to one skilled in the art to modify the process of preparing the cited example by using other techniques disclosed as forming layers of the desired thicknesses such as hot pressing with a reasonable expectation of forming a useful holographic recording medium where a second support is in contact with the recording layer and also where both supports have been removed.

The claims rejected under this heading do not require a a4 to be greater than zero and allow the substrate(s), which are later exfoliated, to be glass.

The applicant argues that the lack of a substrate (ie the film is self supporting) is not taught. The examiner directs the applicant language describing the substrate(s) being exfoliated from the recording layer. Further, the examiner notes this only applies to claims 11 and 17 as claim 1 requires two substrates. Clearly to have pressing one has to have force applied from both sides and when in contact with the recording layer they serve to protect it from mechanical damage due to direct contact and further Hiraga et al. "Preparation of the intracavity-grade ..."Chem. Lett., pp. 2255-2258 (1990) teaches the pressing as occurring between two glass plates.

5. Claims 1,2 and 4-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-294652 alone or together with Hiraga et al. "Preparation of the intracavity-grade ..."Chem. Lett., pp. 2255-2258 (1990), in view of Imrie et al. "Induction of liquid crystallinity in blends of amorphous side chain polymers and their analogous co-polymers.". Macromolecules 27(22) pp 6673-6676 (1994), DeMartino '664 , Hisgen et al. EP 17251, Gray et al. '081 and Kawano et al. '895.

DeMartino '664 teaches polyester or polyimide polymers with pendant mesogenic groups according to formula shown in column 2 at lines 60-65. The mesogens can be stilbene and biphenyl moieties as shown in columns 3 and 4. The stilbene moieties are capable of isomerization about the CH=CH bond linking the phenyl groups. A compound having a stilbene moiety bound to a phenyl group in the backbone of the polymer through an ether linkage O-alkyl-O- and the electron withdrawing group is a nitro group is shown in columns 5 and 6 at lines 20-45 and in example VIII. A compound having a biphenyl moiety bound to a phenyl group in the backbone of the polymer through an ether linkage O-alkyl-O- and the electron withdrawing group is a nitro group is shown in examples VII. Other examples of the electron withdrawing group include haloalkyl, cyano, acyl, alkanoyloxy, alkoxysulfonyl and the like (5/57-59). The reaction of 4-(6-bromohexyloxy)-4'-nitrobiphenyl with 2-hydroxyterepthalate is disclosed. (col. 13)

Imrie et al. "Induction of liquid crystallinity in blends of amorphous side chain polymers and their analogous co-polymers.". Macromolecules 27(22) pp 6673-6676 (1994) describes blends of polymers 1 and 2 (page 6673) and their properties in table 1 (page 6674). The equivalence of functionality between the copolymers and the mixtures of homopolymers is

disclosed. The use of mixtures of compounds/polymers having different mesogenic groups results in higher clearing temperatures The different mesogenic affects the miscibility of the polymers.

Hisgen et al. EP 172517 teach various mesogen groups, and describes the equivalence of ethylene, N=N and other groups of Z in formula IV and V and the equivalence of these with biphenyl (I). (3/19-4/15)

Gray et al. '081 teach use of polyester LC compositions for recording optical data. This is disclosed as reversible. The use of isomerizable moieties for A (ethylene) and a single bond (biphenyl) as the mesogenic groups is disclosed. (2/20-41)

Kawano et al. '895 teaches holographic optical storage where the ability to photoinduce birefringence and record polarization holograms is disclosed for compositions comprising a polymer, including LC polymers, having a photoisomerizable side chain moiety or a polymer having photoisomerizable compounds dispersed within them.

To address the embodiments bounded by the claims, but not rendered obvious above, such as those where a4 is not zero and includes a mesogenic group, the examiner holds that it would have been obvious to one skilled in the art to modify the media and processes form making it rendered obvious by JP 2001-294652 alone or in view of Hiraga et al. "Preparation of the intracavity-grade ..."Chem. Lett., pp. 2255-2258 (1990) above,

by adding polyester LCs, such as those having biphenyl moieties in place of the azobenzene moeties produced by the reaction shown in [0059] by replacing the 4-(6-bromohexyloxy)-4'-methylazobenzene with 4-(6-bromohexyloxy)-4'-nitrobiphenyl, which isshown to undergo the same reaction by DeMartino '664 with a reasonable expectation of forming a composition able

which has a higher clearing temperature as discussed by Imrie et al. "Induction of liquid crystallinity in blends of amorphous side chain polymers and their analogous co-polymers.". Macromolecules 27(22) pp 6673-6676 (1994) with respect to co-polymer blends) with a reasonable expectation of success based upon the similarity between the CH=CH of the stilbene and the N=N of the azo groups as discussed by Hisgen et al. EP 172517 as discussed above and to use it in an optical recording process with a reasonable expectation of success based upon the teachings of the use of polyester LCs with various mesogenic groups for recording optical information based upon the teachings of Gray et al. '081 and Kawano et al. '895.

6. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

7. Claims 1,2 and 4-22 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-16 of copending Application No. 11/037359 (US 2005/0265134) in view of JP 2001-294652 (machine translation

provided) alone or in view of Hiraga et al. "Preparation of the intracavity-grade ..."Chem. Lett., pp. 2255-2258 (1990).

It would have been obvious to one skilled in the art to modify the claimed invention of claims 1-16 of copending Application No. 11/037359 (US 2005/0265134) which recite polymers having mesogenic groups to use those disclosed by JP 2001-294652 (machine translation provided) with a reasonable expectation of forming a useful optical recording mediumand to form ithese in thicknesses using hot press methods disclosed by JP 2001-294652 (machine translation provided) alone or in view of Hiraga et al. "Preparation of the intracavity-grade ..."Chem. Lett., pp. 2255-2258 (1990).

This is a provisional obviousness-type double patenting rejection.

8. The rejection is modified and the response above is relied upon with regard to the teachings of JP 2001-294652 (machine translation provided) and Hiraga et al. "Preparation of the intracavity-grade ..."Chem. Lett., pp. 2255-2258 (1990).

9. Claims 1,2 and 4-22 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-5,7-31 of copending Application No. 10/454690 (US 2004/0029038) in view of JP 2001-294652 (machine translation provided) alone or in view of Hiraga et al. "Preparation of the intracavity-grade ..."Chem. Lett., pp. 2255-2258 (1990).

It would have been obvious to one skilled in the art to modify the claimed invention of claims 1-5,7-31 of copending Application No. 10/454690 (US 2004/0029038) which recite polymers having mesogenic groups by using heat pressing to form thick recording layers whtich are self supporting or bounded on both sides with supports as disclosed by JP 2001-294652

(machine translation provided) and Hiraga et al. "Preparation of the intracavity-grade ..."Chem. Lett., pp. 2255-2258 (1990) with a reasonable expectation of forming a useful optical recording medium.

This is a provisional obviousness-type double patenting rejection.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Martin J. Angebranndt whose telephone number is 571-272-1378. The examiner can normally be reached on Monday-Thursday and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Martin J Angebranndt
Primary Examiner
Art Unit 1756

7/5/07